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**Anglo American Exploration Australia Pty. Ltd.
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**EL23635 “McArthur”
First Annual Report
For the Period 4/07/2003 – 3/07/2004**

Volume 1 of 1

**Tenure
Holder:** Anglo American Exploration (Australia) Pty
Ltd
**Tenement
Operator:** Anglo American Exploration (Australia) Pty
Ltd
Compiled By: Trudi Kennedy
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Distribution

***Department of Business Industry and Resource Development, NT -
(1)
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SUMMARY

Exploration Lease 23635 “McArthur” covers an area of 278km² and is located within the McArthur Basin near the Gulf of Carpentaria, Northern Territory, approximately 30 km southwest of Borroloola, on the Bauhinia Downs 1:250,000 map sheet. Anglo American Exploration (Australia) Pty Ltd was granted the lease on 4th July 2003 for a period of six years. The lease now forms part of a regional exploration project that Anglo American Exploration (Australia) Pty Ltd is undertaking within the Batten Trough.

The exploration target is sediment hosted massive sulphide Zn-Pb deposits. Results of previous exploration by Rio Tinto Exploration in the area have confirmed the favourable geological setting and Zn-Pb prospectivity of the sub-basin. The sub-basin remains a quality “grassroots” exploration target that Anglo American Exploration (Australia) Pty Ltd intends to test as part of their larger Batten Trough Project.

During the first year of the lease work conducted has comprised of a review of all previous exploration in the Batten Trough dating back over 40 years, reinterpretation of this data and selection of suitable target areas with the potential to host ‘world-class’ orebodies. This has involved data gathering and review, geoscientific desktop studies, organising ground access and logistical preparation for the current field season. 2004 field activities have been delayed until June due to an excessively long wet season; this fieldwork had originally been planned for April.

Permission was received in March 2004 from the Director of Mines, Northern Territory Government, for drilling evaluation of the Project to commence.

Keywords

EL23635, McArthur, Middle Proterozoic, McArthur Basin, Batten Trough, Zinc, Lead, Base Metals, Emu Fault Zone, Batten Subgroup, Umbolooga Subgroup, Roper Group, Reward Dolomite, Caranbirini Member, Hot Spring Member, Donnegan Member, Lynott Formation, Yalco Formation, Stretton Sandstone, Limmen Sandstone, Mainoru Formation, Crawford Formation, Emu Fault Zone, McArthur River (HYC) Zn-Pb-Ag deposit.

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1. INTRODUCTION

This report outlines the exploration activities conducted on EL23635 “McArthur” during the period 4th July 2003 to 3rd July 2004. Anglo American Exploration (Australia) Pty Ltd (AAEA) was granted the lease on 4th July 2003 for a period of six years. EL23635 now forms part of a regional exploration project that Anglo American Exploration (Australia) Pty Ltd is undertaking within the McArthur Basin. The other leases within the Project include EL23496, EL23497 and EL23942 held by AAEA and EL7294, EL10103, EL10317, EL10329, EL10316 and EL23676 being explored in Joint Venture with Rio Tinto Exploration Pty Ltd (North Mining Limited).

EL23635 is located approximately 30km southwest of Borroloola in the Northern Territory on the Bauhinia Downs (SE53-03) 1:250,000 map sheet and the Batten (6065) 1:100,000 map sheet. The Carpentaria Highway is located along the eastern margin of the project area.

Results of previous exploration by Rio Tinto Exploration Pty Limited’s in the area have confirmed the favourable geological setting and Zn-Pb prospectivity of the sub-basin.

2. TENURE

Figure 1 shows the Lease Plan and the table below shows the 90 sub blocks, on the Bauhinia Downs 1:250,000 map sheet, that comprise the lease.

Block	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
192																X	X	X	X	X	X	X	X	X	X
193																X	X	X	X		X	X	X	X	
264	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
265	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
336	X	X	X	X	X	X	X	X	X	X	X					X					X				
337	X	X	X	X	X	X	X	X	X	X															

Table 1. Sub-blocks that comprise EL23635.

3. EXPENDITURE

Listed in the table below, are details of the expenditure incurred on EL23635 during the reporting period.

ITEM	COST
Staff salaries	\$5,110
Geological consultants	\$3,791
Field expenses	\$168
Field property costs	\$35
Land tenure maintenance costs	\$1,010
Printed & digital data	\$320
Travel, accommodation & vehicle expenses	\$522
Vehicle maintenance costs	\$197
Administration	\$1,672.95
TOTAL	\$12,825.95

Table 2 Expenditure EL23635

4. REGIONAL GEOLOGY

EL23635 "McArthur" is located within the Middle Proterozoic McArthur Basin of northern Australia. The Batten Trough is a 70km wide north-trending syn-sedimentary graben or half-graben that is defined to the east by the Emu Fault Zone. The McArthur Group sediments within the Trough are comprised of the Batten and Umbolooga Subgroups and are approximately 4.5km thick. The overlapping Younger Roper Group sediments obscure the western margin. Generally the Proterozoic rocks have only undergone minor folding and faulting.

The Reward Dolomite within the lease represents the Umbolooga Subgroup of the McArthur Group. The following descriptions are from the 1:250,000 Bauhinia Downs map sheet (SE 53-02). The Reward Dolomite is comprised of dololutite, stromatolitic dololutite, silty dololutite and sandstone. The Caranbirini Member, the Hot Spring Member and the Donnegan Member of the Lynott Formation represent the Batten Subgroup, in the eastern side of the lease. The Caranbirini Member is a thin-bedded dolomitic siltstone and shale (that is in part carbonaceous and pyritic), silty dololutite, dololutite with minor dolarenite. The Hot Spring Member consists of thin-bedded dolomitic siltstone and silty dololutite with interbeds of fine-grained sandstone, chertified stromatolitic dolostone, sandy dolarenite and dolomitic sandstone. The Donnegan Member is comprised of dolomitic siltstone, fine- to coarse-grained dolomitic sandstone and sandy dolarenite. The overlying Yalco Formation crops out through the centre of the lease and to the northwest and southwest. This unit consists of thinly interbedded stromatolitic dololutite, silty dololutite, dolarenite and minor sandstone with abundant chert nodules and laminae. The Stretton Sandstone crops out in the central and western portions of the lease and is comprised of fine- to medium-grained, thin- to medium-bedded quartzarenite. On the eastern faulted margin of the lease, along the Emu Fault Zone, the Limmen Sandstone has a minor representation of fine-grained structureless quartzarenite with clay cast imprints and minor ripples and cross-beds, interbedded with grey micaceous siltstone. Very fine-grained sandstone and iron-stained, poorly sorted pebbly sandstone also occur. Local outcrops of the Mainoru Formation also occur on the eastern

margin and are represented by a red-brown micaceous siltstone to very fine-grained sandstone with minor thin beds of dolomitic siltstone and light purple mudstone, uniform laminated light green to light purple micaceous siltstone to muddy siltstone, minor glauconitic fine-grained sandstone and siltstone. The eastern margin of the lease also contains a thin strip of the Crawford Formation, a red-brown fine-grained micaceous sandstone and siltstone with minor mudstone beds, glauconitic sandstone and feldspathic sandstone.

Cainozoic gravel, sand silt and alluvium occur along drainage systems and Cretaceous sandstone, lithic sandstone, clayey sandstone, conglomerate and sandy claystone crop out in the western portion of the lease to the north and south.

Government mapped geology is included as Figure 2.

5. EXPLORATION RATIONALE

Previous exploration results by other companies in the area had confirmed the favourable geological setting and Zn-Pb prospectivity of the sub-basin. The target sought is sediment hosted massive sulphide Zn-Pb deposits similar to those that occur at Mt Isa, Century (within the Lawn Hill Formation) or the McArthur River mine. The sub-basin remains a quality “grassroots” exploration target that Anglo American Exploration (Australia) Pty Ltd intends to test as part of their larger Batten Trough Project.

6. PREVIOUS EXPLORATION

Amoco Minerals Australia Company, Ashton Mining Limited in joint venture with BHP Minerals, Normandy Exploration Limited and MIM Exploration Pty Ltd have previously conducted base metal exploration over all or part of the current EL23635 now held by Anglo American Exploration (Australia) Pty Ltd.

Amoco Minerals Australia Company undertook exploration in the area commencing in 1976. They contracted 2,420 line kilometers of airborne Input EM/magnetics and spectrometry to be flown over five Licences including part of the current lease EL23635. This work was followed up by ground IP and geochemistry (rock chip and stream sediment sampling), percussion drilling and three diamond drill holes (MANT 78-1, MANT 79-2 and MANT 79-3) at Caranbirini (with negative results; one hole did not reach target depth). A prospective zone, known as the Caranbirini anomaly, showed strongly anomalous geochemical and geophysical responses proximal to the Emu Fault Zone (north of the “HYC” mine). Air photo interpretive geology outlined basinal

structures known to contain the prospective Barney Creek Formation. In 1980 Kennecott briefly entered into a joint venture with Amoco to explore these Licences but subsequently withdrew. CRA Exploration drilled 13 percussion holes and one diamond drill hole (DD82CA1) after entering to a joint venture with Amoco in 1982. DD82CA1 intersected Reward Dolomite and Barney Creek Formation; massive pyrite beds were common with traces of sphalerite and some coarse galena. Drilling indicated that the Barney Creek Formation thickens substantially towards the Emu Fault Zone. During 1983 CRAE drilled a further two diamond drill holes (DD83CA2 and DD83CA3). DD83CA2 failed to intersect Cooley Dolomite but did record weak Cu and Pb values in silicified Reward Dolomite. DD83CA3 intersected Pb-Zn-Ag mineralized Cooley Dolomite at 430m RL overlain by 16m of laminated pyritic HYC-type shale bearing weak Zn and Ag mineralisation. It was concluded that DD83CA3 was drilled closer to the source of mineralisation than DD82CA1. An infill gravity survey was conducted and subsequently DD84CA4 was drilled; the fault zone, where drilled, was barren.

From 1992 Ashton Mining Limited (as the operator of the Australian Diamond Exploration Joint Venture [ADEJV] that also included Aberfoyle Resources Ltd and Australian Diamond Exploration Pty Ltd), formed an additional joint venture (known as the McArthur River Joint Venture) with BHP Minerals, and began exploration in the area. Ashton Mining Limited (as operator of the ADEJV) was targeting diamond deposits while BHP Minerals was exploring for base metals. Base metal exploration included airborne TEM / magnetic survey (449 line km) and a stream sediment sampling program (205 samples) over sedimentary rocks of the lower Roper Group and the Batten Subgroup (western edge of the lease). The TEM survey defined eight anomalies within the lease and several areas of elevated stream sediment geochemistry were determined. Only one of the TEM anomalies was coincident with a stream sediment anomaly. Two anomalies defined by the QUESTEM survey of 1992 were followed up with soil sampling. In total 238 stream sediment samples were collected along with 102 soil samples and 16 rock chip samples. Ground TEM surveys were conducted over two anomalies defined by the airborne survey but no conductors found were considered to be worthy of drill testing.

In 1992 MIM Exploration Pty Ltd held the ground under EL8078 and conducted ground follow up (SIROTEM) of selected conductive anomalies defined by a previous airborne QUESTEM survey. Soil sampling was conducted in the vicinity of the Bald Hills Fault and one diamond drill hole (Lynott 1 DD) was completed. Lynott 1DD was drilled to 1500m and terminated in HYC Pyritic Shale Member with minor to moderate concentrations of pyrite recorded.

Normandy Exploration Limited held leases over part of the area now under EL23635, from 1994. A helimag survey was conducted and two RC holes were drilled, one of which (BRC2) was on EL23635. This hole was collared in Donnegan Member (dolomitic siltstones) passing into the Hot Spring Member at 60m consisting of dolomitic siltstones, mudstones and minor shales

(carbonaceous). No significant units were intersected and the Licences were relinquished.

From 1992-1995 BHP Minerals Pty Ltd held EL7576, which covered part of the lease EL23635 now held by AAEA. The target was sediment-hosted base metal mineralisation. BHP Minerals conducted 125-line km of airborne TEM/magnetics and collected 23 soil samples, 54 stream sediment samples and one rock chip sample. No encouraging results were received from the work conducted and so the Licence was relinquished.

In 1995 MIM Exploration Pty Ltd held ground that covers the southern portion of EL23635 (AAEA). The target philosophy was base metal leakage haloes along major structures. An orientation rock chip sampling program was conducted but this failed to produce any enhanced assay results plus a change in company exploration priorities lead to the lease being relinquished.

7. EXPLORATION CONDUCTED

Work carried out on EL 23635 since the lease was granted has comprised of a review of all previous exploration in the Batten Trough dating back over 40 years, reinterpretation of this data and selection of suitable target areas with the potential to host 'world-class' orebodies. This has involved data gathering and review, geoscientific desktop studies, organising ground access and logistical preparation for the current field season. 2004 field activities have been delayed until June due to an excessively long wet season; this fieldwork had originally been planned for April.

8. PROPOSED FUTURE EXPLORATION

Future work planned on this lease includes further compilation of geological data sets, geological mapping and reconnaissance investigations with subsequent ground geophysical surveys (20 line km of EM planned) and drilling of prospective areas. The proposed expenditure for this work will be approximately \$30,000.

9. CONCLUSION

EL 23635 is being explored for Zn-Pb deposits of the Mt Isa, Century (within the Lawn Hill Formation) or the McArthur River mine type. Work carried out since the lease was granted has comprised of a review of all previous exploration in the Batten Trough dating back over 40 years, reinterpretation of this data and selection of suitable target areas with the potential to host 'world-class' orebodies confirming the prospectivity of the region. Future work planned may include

further compilation of geological data sets, geological mapping and reconnaissance investigations with ground geophysical surveys and drilling of selected areas.

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